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AN ANALYSIS OF 121 CASES.

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THE following brief notes on some few points in connection with the pathology of common hepatic cirrhosis may possibly prove of some interest as a supplement to the valuable and suggestive papers by Dr. Foxwell and Dr. Rolleston and Mr. Fenton which have recently appeared in this *Review*.

From the *Post-Mortem* Reports of the Manchester Royal Infirmary recording the pathological examination of 3,053 so-called “medical” cases, I have been able to collect 121 examples of “common” cirrhosis. A considerable number of these have passed through mine own hands during the past five years. All doubtful cases have been excluded. I have eliminated cases in which cardiac or other chronic affections seemed to have led to associated lesions in the liver. A large number of well-marked cases of cirrhosis have thus had to be omitted. All those in any way connected with syphilis have been passed over. Examples of so-called “biliary” or “hypertrophic” cirrhosis have also been omitted.

I have therefore, as far as possible, limited my collection to examples of uncomplicated common or coarse cirrhosis of the liver ; and I venture to think that, at least from the stand-point of the morbid anatomist, my cases may be considered as fairly comparable.

I have not adopted any division into alcoholic and non-

alcoholic cases. Desirable as such a grouping may be, I am convinced that, as generally used, it is most unsatisfactory and often misleading. I am quite willing to admit that a coarse cirrhosis sometimes appears in seemingly non-alcoholic subjects. In most of the cases, however, which have come under my observation the patients had either a clear alcoholic history or presented circumstantial or pathological evidence of alcoholism.

*Causes of Death.*—Of the 121 cases 60 appeared to be fatal directly from the effects of the hepatic cirrhosis. No less than 15 seemed to have died directly from tuberculosis, 12 had tubercular peritonitis. Acute lobar pneumonia occurred in 5. A number of deaths were due to cardiac involvement. Several died from hæmatemesis, epistaxis, and cerebral hæmorrhage. In one case I found the stomach distended with blood, although none had been ejected from the mouth. Rupture of aneurysm occurred in 2. Malignant disease was present in one case. Hæmorrhagic nephritis was also marked in one. Diabetes mellitus occurred in one case. Secondary pneumonia was present in several. I have also met with malignant endocarditis in association with marked hepatic cirrhosis.

*Sex.*—Of the 121 cases 82 were males and 39 females. The relation of males to females is thus seen to be about 2 to 1. As the accommodation of our hospital for medical female cases is somewhat less than that for males, these numbers are of but limited value as indicating the true proportion between the sexes.

*Ages.*—The actual age was ascertained in 108 of the cases, 73 males and 35 females. The remainder were all adults.

Result of analysis :—

AGE.		MALE.		FEMALE.
Oldest	- -	68 years	- -	65 years.
Youngest	- -	19 "	- -	19 "
Average	- -	45'5 "	- -	42 "

*Ascites.*—Dropsical accumulation in the peritoneal cavity was present in 68 cases, 47 being males and 21 females. In the majority the ascites was considerable. Many had been fre-

quently tapped. In the female cases the amount of ascites was generally less extensive than in the males. Considerable ascites was almost always present in the cases which presented marked hæmatemesis. Certainly these important secondary conditions do not mutually exclude each other.

*Weight of the Liver.*—The weight of the liver was obtained in 93 cases, 61 males and 32 females. Result:—

WEIGHT.		MALE.		FEMALE.
Maximum	- -	118 ounces	-	104 ounces.
Minimum	- -	26 „	- -	18 „
Average	- -	53·20 „	- -	53·89 „

*Size of the Liver.*—Special note as to the bulk of the liver was made in 73 cases. The result was as follows:—

SEX.	NO. OF CASES.	INCREASED.	NORMAL.	DIMINISHED.
Males	- 52	17	3	32
Females	- 21	7	1	13
	—	—	—	—
Totals	- 73	24	4	45

Report as to size of an organ naturally depends entirely on the opinion of the pathologist making the examination. Comparing my own observations with records made twenty to thirty years ago, it has seemed to me that the small cirrhotic liver is much less frequently met with now than it was formerly. I wish here, however, to clearly point out that there is a fallacy in comparing enlargements of the liver clinically and pathologically. Many cases which appear, and undoubtedly are, above the normal size during life, may be found of natural extent, or even diminished, at the *post-mortem* examination. This applies particularly to states of active and passive engorgement, and to a less extent the same variation occurs in many cases of cirrhosis. Considerable confusion must occur unless this variability in size between the *ante-* and *post-mortem* liver is carefully kept in mind.

*Character of the Cirrhotic Liver.*—A "hob-nailed" liver is not of common occurrence in our *post-mortem* department,

although the number of undoubtedly alcoholic subjects coming under examination is very considerable. A fatty liver is constantly being met with in alcoholics dying from traumatism or diseases other than cirrhosis. With these it is not my purpose to deal at the present time.

As far as the description will allow, my "cirrhotic" cases may be roughly grouped as follows :—

CHARACTER OF LIVER.	MALE.	FEMALE.	TOTAL.
"Hobnailed" - - - -	21	8	29
"Cirrhotic," "granular," or "rough" -	46	20	66
"Cirrhotic and fatty" - - - -	7	7	14
"Nodulated" - - - -	7	2	9
	—	—	—
	81	37	118

*Weight of the Spleen.*—The weight of the spleen was obtained in 84 cases, 53 males and 31 females. Result :—

WEIGHT.	MALE.	FEMALE.
Maximum . - -	36½ ounces	30 ounces
Minimum - - -	1 „	2.5 „
Average - - -	14.25 „	11.62 „

*Size of the Spleen.*—Details as to size, which of course depends in great measure on the opinion of the examiner, was obtained in 77 cases, 53 being males and 24 females. Particulars are shown as follows :—

SIZE.	MALES.	FEMALES.	TOTAL.
Increased - - -	44	20	64
Normal - - -	5	2	7
Diminished - - -	4	2	6
	—	—	—
Number of cases -	53	24	77

It may be well here to point out that the spleen, like the liver, often undergoes considerable change in size, and varies considerably in extent between *ante-* and *post-mortem* periods.

COMPARISONS BETWEEN SPLEEN IN "CARDIAC" AND  
"CIRRHOTIC" CASES.

Dr. Graham Steell first drew my attention to the fact that the enlargement of the spleen in "cardiac" cases was less than that in hepatic "cirrhosis." As Dr. Foxwell well says: "The anatomy of its circulation would appear to insist that it should enlarge to a smaller extent than the liver when the condition is one of thoracic obstruction, as the liver then acts as a buffer between it and the thorax." As far as I know, this difference has hitherto not been clearly expressed by any definite figures. I have therefore collected details as to the weight of the "cardiac" spleen as compared with that occurring in connection with hepatic cirrhosis.

I have records of 56 cases of "nutmeg" liver. All were from uncomplicated "cardiac" cases. I have excluded cases where there was malignant endocarditis, distinct febrile processes, or other conditions likely to affect the size of the spleen in any other way than by direct venous engorgement.

Of the 56, 33 occurring in males averaged 55·14 ounces; 23 occurring in females averaged 55 ounces. The age of the patients was obtained in 54; the males averaged 40 years, and the females averaged 38·75 years.

The weight of the spleen was as follows:—

WEIGHT.	MALES.	FEMALES.
Maximum -	16 ounces	11 $\frac{1}{4}$ ounces
Minimum -	2 $\frac{1}{2}$ „	3 „
Average -	7·32 „	7·32 „

It is thus clearly seen that the "hepatic" spleen is considerably heavier than the "cardiac" spleen, and one may also, I think, safely infer that it is considerably larger. The difference may be compared thus:—

	AVERAGE WEIGHT.		
	MALES.	FEMALES.	BOTH SEXES.
"Hepatic" spleen	14·25	11·62	12·93
"Cardiac" spleen	7·32	7·32	7·32

## ASSOCIATED RENAL CONDITIONS.

It is not my wish at the present time to dwell on the alterations met with in the kidney in cases of hepatic cirrhosis. I may however just point out the chief macroscopic results noted in 107 cases:—

Of 74 males, 59 appeared perfectly normal or simply "congested". In many the cyanosis had led to considerable increase in size and weight.

In 2 cases one kidney was atrophied, apparently from some local cause. Acute nephritis was present in one. Chronic parenchymatous nephritis was also present in one. "Amyloid" change was possibly present in 2. Only 9 showed evidence of "cirrhosis."

Of 33 females, 20 appeared normal except for "cyanotic" characters. Two presented changes indicative of parenchymatous nephritis. Eleven showed evidence of "cirrhosis."

Thus in 107 cases only 20 presented macroscopic evidence of renal "cirrhosis," and in many of these the appearances were comparatively slight and in some even doubtful.

I venture to think these numbers tend still further to support the view that the agents which lead to common cirrhosis of the liver do not to any important extent induce cirrhosis of the kidney.

## SUMMARY.

An analysis of these Manchester cases appears to warrant one in arriving at the following conclusions:—

1. Common cirrhosis cannot conveniently be divided into alcoholic and non-alcoholic varieties. Most examples met with in hospital occur in alcoholic subjects.

2. Nearly 50 per cent. of the cases die directly from the effects of the hepatic cirrhosis.

3. Over 12 per cent. die from active tuberculosis. Tubercle of the peritoneum occurs in a little over 9 per cent. Either active, latent, or obsolete tubercle is met with in nearly 24 per cent of all cases.



4. Cirrhosis appears commonest in males, the proportion being about 2 to 1.

5. The average age at death is—for males,  $45\frac{1}{2}$ ; and females, 42; that is to say, cirrhosis is fatal to women earlier than to men by  $3\frac{1}{2}$  years.

6. Ascites occurs in 56 per cent. of all cases. It is usually less extensive in females than males.

7. Ascites constantly occurs in association with hæmatemesis, and they are not to be considered as mutually exclusive.

8. The weight of the liver averages—in males, a little over 53 ounces; in females, nearly 54 ounces.

9. The liver is increased in size in nearly 33 per cent. of all cases, diminished in about  $61\frac{1}{2}$  per cent., and normal in size in only about  $5\frac{1}{2}$  per cent.

10. The liver varies in size between its *ante-* and *post-mortem* conditions.

11. Typical "hob-nailed" livers are not common at the present day, although evidence of alcoholism is constantly being met with.

12. The spleen in hepatic cirrhosis weighs on the average in males  $14\frac{1}{4}$  ounces, in females a little over  $11\frac{1}{2}$  ounces.

13. The spleen is enlarged in 83 per cent., normal in size in nearly  $9\frac{1}{2}$  per cent., diminished in  $7\frac{3}{4}$  per cent.

14. The "cyanotic" spleen of hepatic cirrhosis is larger and heavier than that met with in "cardiac" cases.

15. Renal "cirrhosis" only occurs in association with hepatic cirrhosis in a little over  $18\frac{1}{2}$  per cent. of all cases.

